Request For California Public Interest Gas Research and Development Project Concept Abstracts for the 2006 Program Year

In August of 2004, the California Public Utilities Commission (CPUC) issued an Order that tentatively established an annual budget for public interest natural gas research and development (R&D) projects to be administered by the California Energy Commission (Energy Commission). The tentative annual budget for 2006 is \$15 million. The CPUC and Energy Commission are preparing a prioritized list of research areas that meet the CPUC's criteria for funding in 2006.

Per the CPUC, public interest gas R&D activities are directed towards advancing science or technology, 1) the benefits of which accrue to California citizens and 2) are not adequately addressed by competitive or regulated entities. Projects should be responsive to the following criteria:

- 1) Focus on energy efficiency, renewable technologies, air quality, climate change and advanced generation research issues,
- 2) Support State Energy policy, see California Energy Action Plan for information on related policy objectives (http://www.energy.ca.gov/)
- 3) Offer a reasonable probability of providing benefits to the general public, and
- 4) Consider opportunities for collaboration and co-funding opportunities with other entities

The Energy Commission received 209 abstracts in response to its request, posted July 5, 2006. The due date for abstracts was August 1, 2005. The list of abstracts can be viewed at the following URL:

www.energy.ca.gov/naturalgas research/

The abstracts will be ranked as follows:

ABSTRACT RANKING PROCESS

I. Screening

Screen 1: Does the Project Abstract describe a public purpose natural gas R&D activity – yes or no?

- If yes, abstract proceeds to next screen
- If no, abstract is not reviewed further

Screen 2: Does the Project Abstract fit into one of the identified Program Research Areas Identified by CPUC Order and Energy Commission staff?

If yes, the abstract is assigned to the appropriate Program Area for ranking in Screen 3. If the abstract spans multiple Program Areas it is assigned to each one for ranking in Screen 3.

• If no, the abstract is assigned to the "Other" Program Area.

II. Scoring

Screen 3: Project Abstracts are ranked, within each Program Research Area.

The abstracts are ranked as *high, medium or low* potential using the following group of subjective criteria:

- Subject Area Fit
- Potential Benefits
- Connection to State Energy Policy and gas issues identified in California Energy Action Plan
- Potential for success, reasonable probability of providing benefits to the general public
- Whether adequately addressed by competitive or regulated entities
- Consideration of opportunities for collaboration and co-funding opportunities with other entities

Abstracts in the "Other" Program Research Area category are probably ranked either medium or low. This is because they do not meet one of the criteria, which is fitting into one of the defined Program Areas – which relate to the CPUC order criteria. However, it is possible that a project abstract may cause a rethinking of the Program Research Initiatives that have been selected.

The ranked and screened abstracts will be included in the 2006 Public Interest Energy Research Natural Gas Program Plan to be submitted to the CPUC on August 31, 2005.

ID#	Title	Author
1	A NEW CLASS OF ARICES MINIMIZING ENGINE EMISSIONS & sfc	Pao Chi Pien
2	Natural gas replacement/synthesis using waste gasification	Leland T. Taylor, Thermogenics Inc.
3	Sitegen	RCSystems
4	Bay Island Biodiesel Pilot Project	Martin Kurtovich, P.E.
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5	Renewable Biogas Solid Oxide Fuel Cell Development	David Tsay
6	High Performance Compact Integrated Appliance	Richard F. Topping P.E.
7	Heating Only Gas-Fired Heat Pump	Richard F. Topping P.E.
8	Pendulating Gravity Sail Prototype Developement Project	Jonathon E. Mooring
9	Natural Gas Powered Steam/Gas-Electric Locomotive	Thomas W. Blasingame
10	Natural Gas Powered Steam/Gas-Electric Truck/Tractor	Thomas W. Blasingame
11	Natural Gas Powered Dual Fuel Diesel-Electric Locomotive	Thomas W. Blasingame
12	Natural Gas Powered Steam/Gas-Electric Tug Boat Propulsion System	Thomas W. Blasingame
13	Stationary Photovoltaic Modules with Parabolic-Prismatic Concentrators	Dr. Sergey N. Kivalov
14	Printed Photovoltaic Roofing Material	Dr. Russell Gaudiana
15	Absorption Power and Refrigeration Cycle	Hank Leibowitz
16	California-Mexico Natural Gas Issues	Rick Van Schoik, SCERP
17	Ultra-Low NOx Duct Burner for Natural Gas-Fired CHP Turbines	Kenneth O. Smith
18	Ultra-Low NOx Gas Turbine Combustion System for Landfill Applications	Kenneth O. Smith
19	A Desiccant-Assisted Evaporative Cooler for Commercial Buildings	Andrew Lowenstein
20	Coal Gasification	William A. Lansville
21	Cost Effective Landfill Gas To LNG Processing Technology	CryoEnergy International, Inc.
22	Gas fired Heat Pump for Commercial and Light Industrial Applications	Robert Panora, Tecogen, Inc.
23	Radiation Fog, Lower Temperatures, and Natural Gas Use in Central CA	Dr. Jeffrey Underwood
24	Infrared Biogas Sensor	Carthago International Solutions, Inc.
25	Intrinsically Safe Gas Sensor	Carthago International Solutions, Inc.
26	Bio-Hydrogen from wood waste with mixed culture of microorganisms	Richard W. Prosser - GC Environmental Inc.
27	Hydrogen from Coal and Sunshine	Dr. Sergey N. Kivalov
28	Demonstartion of High Efficiency Natural Gas CHP Systems in California	Prashant S. Chintawar
29	Gas Engine-Driven Chiller in Innovative Heating Application	James D. Corlett
30	"Effects of Fuel Gas Composition for Natural Gas Engines"	Dr. Daniel Olsen
31	Ignition System Development for High BMEP Natural Gas Engines	Dr. Daniel Olsen
32	A New Concept in High Efficiency Natural Gas Fired Space Heating	Charles Hannon
33	Aggregated Methane Production at Concentrated Animal Feeding Operation	John M Brown
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Natural Gas Pump Using Water Agency Efficiency Improvements House, Ph.D. Gas Supply Strategic Plan and Collaborative Assessment Casa Interchangeability-Impacts of Alt. Gas Supplies on Gas Paul Brooks Environmental/Economic Impacts from CHP and Digesters at Hog Farms Compressed Air Energy Storage and Enhanced Gas Recovery: Series Optimizing or eliminating reheat in high tech buildings Optimizing or eliminating reheat in high tech buildings Optimizing or eliminating reheat in high tech buildings California's economy and a constrained natural gas future California's economy and a constrained natural gas Engines Aftertreatment Technologies for Lean Burn Natural Gas Engine Burners Aga Smith Daniel Olsen, PhD Daniel Olsen, PhD Daniel Olsen, PhD Paul Bautista Robert K. Cheng Ray Smith Actert Scheng Robert K. Cheng Ray Smith Jeremy Platt Dan McCormick Dan McCormick Dan McCormick Dan McCormick Dan McCormick Dan McCormick Natural Gas as a Bridge to Hydrogen Sourced Energy Solitions After Schenger Schenger For Peak-Demand D.G			
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	Modeling Air Quality Consequences of Natural Gas Energy	
204	Generation	Peter Connell
205	Passive Energy Flue Dampers	Advanced Conservation Technology, Inc. (DBA: ACT, Inc Metlund Systems)
206	Use of natural gas in propane reforming for fuel cell application.	Dr. Zoe Ziaka
207	Absorption Heat pump Powered Dryer	H. Adam Bosschieter & Earl Schmid
208	Enhanced web-based analysis tool to reduce residential natural gas use	Evan Mills, Rich Brown
209	Closed Brayton Cycle Residential Energy Conservation System	Johan Wassenaar, Creative Energy Systems